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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,757	08/28/2001	Yi Wei	CR00-046	5781

23330 7590 10/20/2004
MOTOROLA, INC.
CORPORATE LAW DEPARTMENT
SUITE R3163 PO BOX 10219
SCOTTSDALE, AZ 85271-0219

EXAMINER

TRINH, MINH N

ART UNIT PAPER NUMBER

3729

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,757

Applicant(s)

WEI ET AL.

Examiner

Minh Trinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-6 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed on 8/19/04 has been fully considered and made of record. Claims 1-6 are now pending in this application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3-5 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Xu et al (US 5,973,444) in view of Yoshikawa et al (6,023,125).

Xu et al disclose a method of forming a vacuum microelectronic device comprising: forming at least one electron emitter a substrate (see related Figs 3D-9D, which shows a substrate and at least one electron emitter associated therefrom, and the discussion at col. 22, lines 15-18); applying a first electric field to move a portion of the at least one electron emitter in a direction toward the first electric field (as discussed at col. 14, lines 66-67). Xu et al do not teach the conditioning electric field is of a sufficient strength to maintain the at least one electron emitter in the direction of the conditioning electric field after removing the conditioning electric field. Yoshikawa et al disclose the concept as discussed above (i.e., applying conditioning electric field having a sufficient (voltage) in order to maintain to maintain the at least one electron emitter in the direction of the conditioning electric field after removing the conditioning electric field (see Fig. 1, and the discussion at col. 2, lines 8-18 and col. 5, lines 28-33). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teaching of Yoshikawa et al in order to facilitate the fabrication process.

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The motivation for this combination can be found at col. 1, lines 52-55, or col. 7, lines 14-21, etc.

As applied to each of claim 3-5, regarding the following: "using a second electric field having a value that is less than the value of the first electric field" (as recited in claim 3); and the configuration between the second and the first electric field (as recited in claims 4-5). It would have been an obvious matter of design choice to choose any desired value for the first electric field and the second electric field since applicant has not disclosed that the claimed "a second electric field having a value that is less than the value of the first electric field" (as recited in claim 3); and the configuration between the second and the first electric field (as recited in claims 4-5) would solve any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the associated electric field configurations as taught by the applied prior art references.

Limitations of claims 4 and 5 are also met as discussed above.

4. Claims 1 is also rejected under 35 U.S.C. 103 (a) as being unpatentable over Bower et al (US 6,630,772) in view of Yoshikawa et al (6,023,125).

Bower et al disclose a method of forming a vacuum microelectronic device comprising: forming at least one electron emitter a substrate (see related Fig. 3, which shows a substrate and at least one electron emitter associated therefrom); applying a first electric field to move a portion of the at least one electron emitter in a direction toward the first electric field (as discussed at col. 8, lines 40-50). Bower et al is in silent

of maintaining the at least one electron emitter in the direction toward the electric field after removing the first electric field. Yoshikawa et al disclose the concept as discussed above (i.e., applying conditioning electric field having a sufficient (voltage) in order to maintain to maintain the at least one electron emitter in the direction of the conditioning electric field after removing the conditioning electric field (see Fig. 1, and the discussion at col. 2, lines 8-18 and col. 5, lines 28-33). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teaching of Yoshikawa et al in order to facilitate the fabrication process. The motivation for this combination can be found at col. 1, lines 52-55, or col. 7, lines 14-21, etc.

As applied to each of claim 3-5, regarding the following: "using a second electric field having a value that is less than the value of the first electric field" (as recited in claim 3); and the configuration between the second and the first electric field (as recited in claims 4-5). It would have been an obvious matter of design choice to choose any desired value for the first electric field and the second electric field since applicant has not disclosed that the claimed "a second electric field having a value that is less than the value of the first electric field" (as recited in claim 3); and the configuration between the second and the first electric field (as recited in claims 4-5) would solve any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the associated electric field configurations as taught by the applied prior art references.

As applied to claim 6, Bower et al disclose the at least one electro emitter 47 is being nanotube emitter on the substrate (see the discussion at col. 9, lines 55-57).

Response to Arguments

5. Applicant's arguments with respect to rejected claims 1-6 have been considered but are moot in view of the new ground(s) rejections.

Allowable Subject Matter

6. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Interviews After Final

7. Applicants note that an interview after a final rejection will not be granted unless the intended purpose and content of the interview is presented briefly, in writing (the agenda of the interview must be in writing). Such an interview may be granted if the examiner is convinced that disposal or clarification for appeal may be accomplished with only nominal further consideration. Interviews merely to restate arguments of record or to discuss new limitations which would require more than nominal reconsideration or new search will be denied. See MPEP 714.13 and 713.09.

Prior Art References

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Prior art references are cited for their teaching of method of manufacturing vacuum electron devices.

Conclusion

9. Please provide numeral references to the claimed limitations as well as support in the disclosure (i.e., page and line numbers and reference number associated with from the drawings) for better clarity. Applicant requires to point out the support for any amendment made to the disclosure and the claims. See 37CFR 1.111 and section 2163.06 of the MPEP.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

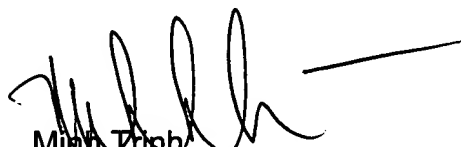
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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Trinh whose telephone number is (703) 305-2887.

The examiner can normally be reached on Monday -Thursday 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (703) 308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7307 for regular communications and (703) 305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.



Minh Trinh
Primary Examiner Group 3729

mt
October 18, 2004